

BRITANNIA Cu-Zn MINE

92G/11E

LOCATION:

The Britannia mine is on the east side of Howe Sound, 40 miles by road north of Vancouver.
Vancouver Mining Division.

OWNERSHIP:

Anaconda Canada Limited

GEOLOGY:

The Britannia district occurs in a "roof pendant" of mid-Mesozoic volcanic and sedimentary rocks surrounded by the Jurassic-Cretaceous Coast Range plutonic complex.

"The Britannia copper-zinc sulfide deposits, previously described as having formed from hydrothermal solutions emplaced into foliated host rocks, are reinterpreted as volcanogenic in origin and to have been deposited from hydrothermal and exhalative solutions related to contemporaneous dacitic volcanism and then deformed during later shearing and faulting. Massive sulfide deposits occur near the upper contact of coarse dacitic tuff. Anhydrite, barite, and chert form related exhalative deposits.

Several periods of inhomogeneous strain produced a broad zone of S-tectonites, the Britannia shear zone, which contains all of the known orebodies; metamorphic assemblages are those of the lower greenschist facies of regional metamorphism. Sulfide textures are similar to metamorphic and deformational textures described in the literature. During ore formation and later shearing, the rocks were chemically altered with increases in K_2O , SiO_2 , and H_2O and decreases in CaO and total Fe. Following major metamorphism, dacite dikes were intruded into the sheared rocks and were controlled by foliation; sulfides were remobilized into late quartz veins during emplacement of the dacite dikes. A major system of late faults developed subparallel to the foliation.

A predeformation reconstruction suggests that the orebodies are segments of two original massive sulfide deposits; this requires a near-vertical displacement along one fault zone followed by sub-horizontal offset with a cumulative right-lateral displacement of several thousand feet." (Payne et al 1980)

RESERVES:

Production 1905-1974

55MT 1.1% Cu, 0.65% Zn, 0.2oz/T Ag, 0.02oz/T Au.

HISTORY:

The Britannia mine, which has produced copper since 1905, closed at the end of October 1974. It has been the leading copper producer of the Province, having mined 52,783,964 tons containing 1,139,223,376 pounds of copper, 276,220,086 pounds of zinc, 492,968 ounces of gold, 5,814,026 ounces of silver, 34,310,727 pounds of lead, and 980,631 pounds of cadmium. The Anaconda Company purchased the Britannia mine from the Howe Sound Company in January 1963, and up to cessation of production produced 6,234,383 tons, containing 146,946,859 pounds of copper. This amounted to roughly 13 per cent of the total production.

Anaconda pursued a vigorous internal exploration program particularly prior to the last three or four years. In 1973, 20,674 feet of diamond drilling was carried out. The early program (1963-1969) resulted in the discovery of the No. 10 orebody which was stated to contain about 3 million tons grading 1.5 per cent copper without significant zinc. To mine this body, a new shaft, No. 10, was sunk with some difficulty from 4100 level to 5700 level. Production from No. 10 orebody started at the very end of 1970. At that time, the remaining ore in the Victoria was depleted and the shaft abandoned. The Bluff orebody was depleted of mineable underground ore in 1971. Anaconda is currently in the process of compiling all past data and are in the process of launching an exploration program in the immediate area.

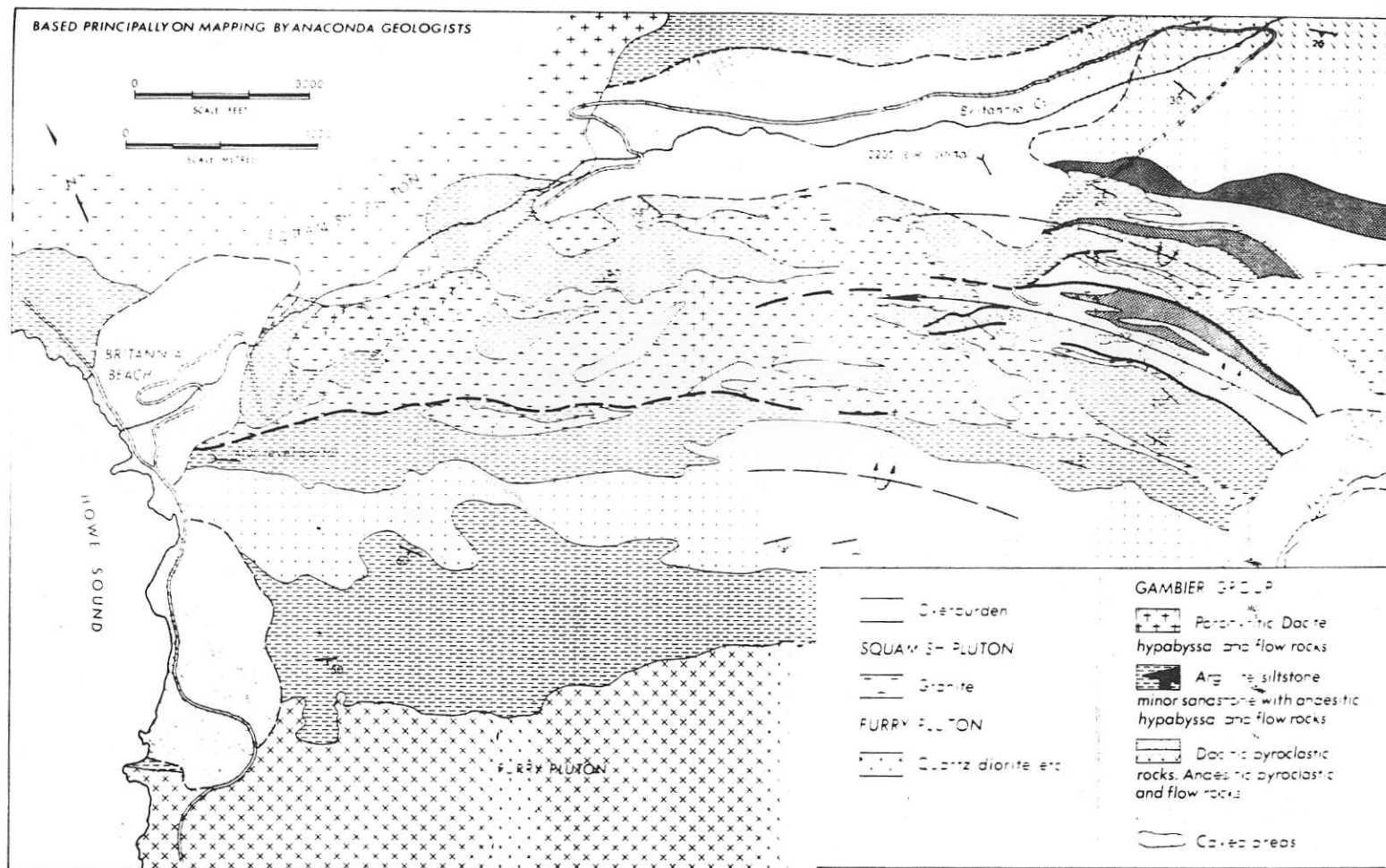


Figure 1. Generalized geology of Britannia mine area, Anacanda Canada Limited.

REFERENCES:

GEM 1969 Pg. 193-194

GEM 1970 Pg. 233-246 Maps and photos

GEM 1974 Pg. 190-197

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Deformed Mesozoic Volcanogenic Cu-Zn Sulphide Deposits
in the Britannia District, B.C.